



**FACULTY OF ANIMAL SCIENCE  
BRAWIJAYA UNIVERSITY**

# **GUIDELINES FOR WRITING**

**| BACHELOR THESIS PROPOSAL,  
| REPORT AND SCIENTIFIC ARTICLE**



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FOR WRITING  
BACHELOR THESIS PROPOSAL,  
REPORT AND SCIENTIFIC  
ARTICLE**



**ANIMAL SCIENCE FACULTY  
BRAWIJAYA UNIVERSITY  
MALANG  
2020**

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# **GUIDELINES FOR WRITING**

## **BACHELOR THESIS PROPOSAL, REPORT AND SCIENTIFIC ARTICLE**

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## **PREFACE**

Guidelines for Writing Bachelor Thesis Proposal, Report and Scientific Article are published based on the Decree of the Dean Number .... the Year 2020 concerning the Rules of Thesis and Scientific Articles for Undergraduate Program Students, Faculty of Animal Husbandry, Brawijaya University.

The Guidelines for Writing Research Proposals, Research Reports, and Scientific Works of the Faculty of Animal Science Brawijaya University written to provide guidelines for students in writing Research Proposals, Thesis Reports, and Scientific Works efficiently and correctly. Besides, it also serves as a guide for lecturers in carrying out the task of mentoring.

This Guideline contains how to write a Research Proposal chapters consisting of the Introduction, Literature Review and Material and Methods (chapters 1-3), while the Thesis Report consists of Introduction, Literature Review, Materials and Methods, Results and Discussion, Conclusions and Suggestions (chapters 1-5), and Appendixs. At the same time, the lists and references have the same contents.

This book results from refining existing manuscripts with some changes following the latest research and scientific work style. We hope that this Guidebook is helpful as a reference in the implementation of education both for Faculty Leaders, Departments of Study Programs, Lecturers, and Students in the Faculty of Animal Husbandry, Brawijaya University.

Faculty of Animal Science  
Brawijaya University  
Dean,

Signed.

Prof.Dr.Sc.Agr.Ir. Suyadi, MS.,IPU., ASEAN Eng.  
NIP 196204031987011001

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# **CHAPTER I**

## **INTRODUCTION**

### **1.1. Definition**

Bachelor Thesis is a scientific paper prepared based on the results of field or laboratory research equipped with inferential statistical analysis for quantitative and descriptive approaches for qualitative approaches, secondary data, or literature studies.

Scientific articles are scientific papers arranged based on the results of field or laboratory research equipped with inferential statistical analysis for quantitative and descriptive approaches as well as a qualitative approach for publication.

### **1.2. Purpose**

The purposes of writing a Bachelor Thesis and scientific articles are:

- Students have the ability, skills, and experience to solve problems in animal Science.
- Students have the ability to compose a scientific work based on scientific methods.
- Students have the ability to write works scientific articles for publication.

### **1.3. Reasons for Guidelines Arrangement**

The guideline of Bachelor Thesis is structured based on the Law No. 20 of 2003 of National Education system, the Government Regulation No. 19 of 2005 of National Education Standards, the Presidential Decree No. 8 of 2012 of the Indonesian National Qualifications Framework (KKNI), and the Regulation of the Minister of Research, Technology and Higher Education No. 44 of 2015 of the National Higher Education Standards. As well as the Regulation of Ministry of Education and Culture No. 3 of 2020 concerning National Standards Higher Education establishes the Policy for Free Learning – Kampus Merdeka.

## **1.4. Bachelor Thesis Learning Outcomes**

Bachelor thesis learning outcomes are students able to plan, carry out research and analyze and draw conclusions on research results by following scientific principles, presenting research results, and explaining in scientific forums by increasing critical idea skills and lifelong learning.

## **1.5. Bachelor Thesis Implementation System**

Bachelor Thesis can be carried out, among others, through

1. Laboratory Research
2. In Vivo Research
3. Field survey research
4. Secondary data Research
5. Design / Innovation Work
6. Literature study Research
7. Big Data / Biocomputation Research
8. Combination of the above types of research

Notes during the Covid-19 pandemic

- No. 1, 2, and 5 are held on the campus/laboratory of UB or in places with private or family ownership by following COVID 19 protocols.
- No. 3 implemented in students' hometown, which does not require a permit.
- No. 4 carried out online, or there is prior approval from the company.



## **1.6. Bachelor Thesis Implementation and Requirements**

Bachelor Thesis implementation is carried out independently or in groups, with individual report. Bachelor Thesis requirements are the student has passed a minimum of 120 credits, no E-grade courses (from the necessity of 106 credits), and a minimum cumulative grade point index of 2,00.

In conducting Bachelor Thesis, a student is supervised by 1 or 2 supervisors. After determining the topic/ title of Bachelor Thesis, the student is directed by the Supervisor to make a research TOR to be sent to the Undergraduate Final Project Commission Team. The Undergraduate Final Project Commission Team will check for the objectives, research methods, and designs including variables (See TOR Submission Guide) of the research planning. Bachelor Thesis is with literature study, thesis will be evaluated by the Final Project Commission Team before the results seminar is held.

## **1.7. Bachelor Thesis Topic Determination**

The Bachelor Thesis topic fields:

- Livestock production
- Nutrition and Animal Feed
- Livestock product technology
- Animal Science socio-economy

## 1.8. Specific Explanation of Literature Studies

The literature study not only means reading and collecting literature but instead leads to in-depth and critical evaluation and analysis of previous research on a particular topic.

Scientific literature can be in the form of:

- Paper from the Scientific Journal
- Composition of the Conference (Proceedings)
- Bachelor Thesis report
- Street vendor reports
- Reports from Trusted Organizations
- Textbook

In the literature review, it is necessary to pay attention to the following taxonomies

Characteritics	Categories	
Focus	Research result	Application
Purpose	Integration	Central Issues
Organization	Historical	Methodological
Perspective	Neutral	Positive/Negative
Audience	Specified	General
Reach	Complete	Essentials only

## **CHAPTER II**

### **BACHELOR THESIS PROPOSAL AND REPORT FORMAT**

There are format differences between Bachelor Thesis proposals and reports writing. the only difference is in the content. Bachelor thesis proposal consists of an introductory chapter, a literature review, and material and methods (chapters 1-3). Bachelor Thesis report consists of introductory chapters, literature review, materials and methods, results and discussion, conclusions and suggestions, and APPENDIXs (chapters 1-5 plus APPENDIXs) Research Proposals and Bachelor Thesis reports are systematically arranged as the followings:

#### **2.1. FRONT SECTION**

The front is composed of:

##### **2.1.1. COVER PAGE**

The cover page is a page that contains the title, name, student ID, logo, and year. Example of bachelor thesis proposal cover page is shown in APPENDIX 1.

##### **2.1.2. TITLE PAGE**

The title page is a page containing the title of the Bachelor Thesis proposal, which is placed after the cover page with the writing procedure as shown in APPENDIX 2. As for the difference between the cover page and the title page, the title page contains the writing of the purpose in making the Bachelor Thesis proposal (An Undergraduate Thesis Proposal presented as partial fulfillment of the requirement for the Bachelor Degree Faculty of Animal Science University of Brawijaya) without the logo of Brawijaya University. The use of capital letters Times New Romans measuring 16 points only in the title, name of the university, name of the faculty, place, and year of publication of the Bachelor Thesis, while others are only the first letter (14 points). The author's

name on the cover page, title page, or approval page is written in full in accordance with what is stated in the birth certificate or birth recognition letter as well as the certificate previously received.

### ***2.1.3. APPROVAL PAGE***

The validation page is a page that shows that the research proposal and Bachelor Thesis report have received approval from the Supervisor and approval from the authorized official.

The approval page contains the Bachelor Thesis title, by, student's name, student ID number, Supervisor and knowing the Head of the Study Program and the Head of the Section according to your interest. An example of the Approval Page format can be seen in APPENDIX 3.

### ***2.1.4. PREFACE***

A preface is a narrative that functions to deliver the message of the content of a research proposal or Bachelor Thesis report and includes a thank you addressed to parties directly related to the implementation of research, preparation of Bachelor Thesis, and scientific articles. Examples of Prefaces are in APPENDIX 9.

### ***2.1.5. TABLE OF CONTENTS***

The table of contents is a list that contains the main points of the proposal, starting from the front page to the end page. The purpose of writing the Table of Contents is to make it easier for the reader to know the main points of the writing in the proposal so that the table of contents contains the serial number and page number of the main points of the article. An example of writing a Table of Contents can be seen in APPENDIX 12.

The word TABLE OF CONTENTS is typed in capital letters, without dots, and is placed symmetrically in the center on the upper bound. On the right side is the word Pages, which is two spaces below the word Table of Contents, ending at the

far right border. The Table of Contents can be more than one page. Between chapters are two spaces, while sub-chapters are one space. Chapter titles are typed in capital letters; Subchapters are typed in lowercase. Sub-chapters are all lowercase except at the beginning of sentences which are uppercase.

#### **2.1.6. LIST OF TABLES**

A list of Tables is a list that contains the numbers and titles of tables and pages in the proposal. The purpose of writing a table of tables is to make it easier for readers to know the types of tables that are presented in the writing

The list of tables is shown in APPENDIX 12.

The word table is typed in capital letters, symmetrically, with spacing above the row word table. Table headings are connected by dots with page numbers and placed five spaces from the right border of the manuscript. Table titles that are more than one line should be typed with one space. The distance between the table headings is two spaces.

#### **2.1.7. LIST OF PICTURES**

A list of Figures is a list that contains serial numbers, image titles, and pages in the proposal. Writing the List of Figures is to make it easier for readers to know the types of writing presented in the picture. An example of writing a List of Figures is shown in APPENDIX 13.

List of Figures typed in an arrangement like a List of Tables. The text included in the List of Figures is graphics, photographs, chemical formulas, and illustrations.

### **2.1.8. APPENDIX LIST**

The APPENDIX List is a list containing the number and title of the APPENDIX and the pages in the proposal. The purpose of writing the APPENDIX List is to make it easier for readers to find out the APPENDIXs contained in the proposal. An example of writing the List of APPENDIXs is as in APPENDIX 15. List of APPENDIXs is typed in the same way as the List of Contents and List of Figures.

### **2.1.9. LIST OF ABBREVIATIONS**

List of Abbreviations is a list that contains all symbols and abbreviations contained in the Bachelor Thesis proposal. This list aims to provide an understanding of all symbols and abbreviations used in writing Bachelor Thesis proposals and are arranged in an alphabetic manner. An example of writing a List of Abbreviations is shown in APPENDIX 9.

## **2.2. CONTENTS SECTION**

The contents of the Bachelor Thesis proposal are structured as follows:

### **2.2.1. INTRODUCTION**

The introduction is arranged systematically and directed in a logical sequence that justifies the background of the problem, problem formulation, objectives, uses, framework, and research hypothesis of the proposed research.

The introduction must describe clearly and concisely about the background of the problem at hand and the need for research to be carried out to solve the problem at hand. The description can be made based on data, literature, or a combination of both, so it is necessary to mention the source of the library. The introduction is written in a compact 2-3 pages.

#### *2.2.1.1. Background*

The background is a description that underlies the importance of conducting a research. Generally, the description is narrowed from general to specific in accordance with the title of the research proposal. The background is prepared based on previous studies contained in journal articles or books.

#### *2.2.1.2. Formulation of the problem*

Problem formulation is a formulation that questions a phenomenon, both in its position as an independent phenomenon, and in its position as a phenomenon that is interrelated between one phenomenon and another, both as a cause and as a result. The formulation of the problem relates to the results of the study in analyzing the situation that exists in the background of the problem, which is then expressed in the form of statements and questions.

#### *2.2.1.3. Purpose*

Objectives are descriptions that explain something to be achieved in research. In the objective there is a clear and unequivocal statement of the relationship between the problem, the research objectives and the conclusions.

#### *2.2.1.4. Usefulness*

Usefulness is a description that explains the benefits associated with the results of the research which consists of 2 things, namely the application of the research results that can be used by interested parties, and by further research related to the research being carried out.

### **2.2.2. LITERATURE REVIEW (*Literature Study is an Exception*)**

The literature review contains the theory that underlies research and the results of previous studies that can be used as an approach to solving problems through research activities. Literature writing is only related to research.

Literature review is more directed towards progress, science and technology in the field of the Bachelor Thesis topic. It does not contain definitions, but contains a series of previous studies. Literature taking is not allowed to write exactly the same, but the meaning is studied, then arranged according to the rules of writing in Indonesian which are good and correct without changing the meaning.

The library sources used must be original and relevant to the research, taking into account the quality of the writing based on the library sources it uses. Original is taken from the original source, which is derived from International Journal articles, National Journal articles, textbooks, statistical books and reliable literature sources, for example the official website. Library sources must also be current. More recent literature reviews are indicated by more

of the 60% referenced literature sources, publication 10 years receding from the time of writing. The library sources used are at least 25 libraries with 75% coming from journal articles. Literature review contains theory and research results that support problem solving, written in a compact between 3 to 5 pages.

#### **How to Write References**

Writing refers to the Harvard style (author-date).

a. The author of two people, then the way of writing in the citation is as follows:

1) The source at the beginning of the quote

Example: According to Susilawati and Yekti (2017)

2) The source at the end of the quote

Example: ... (Susilawati and Yekti, 2017)



b. Authors of three or more people are added by et al., If the reference is in Indonesian, and if it is in English, then added by et al. Here's how to write it in citation:

1) The source at the beginning of the quote

Example: According to Susilawati, et al. (2017)

2) The source at the end of the quote

Example: ... (Susilawati, et al., 2017)

c. Sources that are quoted more than one are separated by a semicolon (;)

For example:

Artificial insemination can have an added value if it is supported by the development of biotechnology in the field of reproduction. This can be useful for getting calves of the expected gender. Sex is determined by the presence of X and Y chromosomes in male spermatozoa (Susilawati, 2000); (Garner and Hafez, 2008); (Ericson, et al., 2008). These differences allow X and Y spermatozoa to separate.

d. Library sources of journal articles do not have to come from complete articles, but can only come from the abstract, because they have the same scientific value and there are several paid journals.

### ***2.2.3. IDEA FRAMEWORK (for literature study there is no Chapter Framework and hypothesis)***

The frame of mind is a brief description that outlines the rationale for conducting the research. The framework is prepared based on the theoretical framework and literature review that has been prepared. The frame of mind is arranged in the form of a narrative and flow chart or flow chart. The frame of mind can be arranged as many as 2 sheets.

#### ***2.2.3.1. Hypothesis***

A hypothesis is an answer or a provisional assumption of what will be studied. Hypothesis do not have to be in a study.

## **2.2.4. RESEARCH MATERIALS AND METHODS**

The Materials and Research Methods chapter contains the location and time of research, research material, research methods, observation variables, data analysis, and term boundaries. These things are described clearly so that other people can repeat the research that has been done in the same way if they want to do a review.

The way of writing the material, materials, and tools is arranged sideways, while the way of writing the analysis procedure or the course of the research is arranged downward according to the work order.

### **2.2.4.1. Location and Time of Research**

The research location should be clearly and completely stated. Specifically for field research, it should be stated in administrative, geographic and topographical, climatological terms as well as the source of the information. The time referred to here is the length of time required for data collection activities.

### **2.2.4.2. Research Material**

The research material describes the sample under study, materials, and equipment. The research sample must be explained about the commodity under study, its quantity, method of acquisition and other supporting information. The research material is clearly described with the scientific name and the name of the producer. The research equipment mentioned the name, specification and the name of the manufacturer of the equipment used.

### **2.2.4.3. Research methods**

Research can be carried out using various methods or approaches; among others, quantitative and qualitative methods follow the formulated problem and research objectives or survey methods and literary studies. Research can be carried out through surveys, experiments or

observations. So it requires adequate planning or design so that the resulting conclusions can represent the population being studied.

The research method includes descriptions related to sampling techniques, experimental design, types of treatments and replications, data collection procedures, and data analysis. Data analysis clearly describes the analysis technique used and the mathematical formulas used by writing down the reference sources. This method helps ensure the correctness and accuracy of how to perform data analysis.

The research method of literary study The research sample is based on the interests of the field of study, the experimental unit, and data analysis carried out by applying logic and objectivity to the phenomenon adjusted to the research objectives to be achieved in the research.

#### *2.2.4.4. Measured variable*

The variables or parameters measured need to be explained in detail what was done and observed during the research by mentioning the reference sources used. The method of measuring these parameters should come from a reliable handbook. Writing this variable is important because it is the basis for evaluating the truth in conducting research.

The variables measured for undergraduate students are at least 3 variables and a maximum of 5 variables that are considered necessary; while the number of tests is not only based on statistical counts but based on their respective scientific fields. For example, research on spermatozoa, according to the provisions of experts in the field of spermatozoa, the parameters used are:

- 1) percentage of progressive motility, concentration, and total motile spermatozoa because they are adjusted to SNI for frozen semen.
- 2) Repeat at least 10 times because spermatozoa have a fast and varied quality change.
- 3) The design used is the RAK with replications as blocks or groups because each individual has a variety of variations.

#### *2.2.4.5. Research Procedures*

Writing research procedures is used so that researchers or readers can easily understand the stages of research to be carried out.

This research procedure contains steps or stages of research; the writing can be numbered by each stage or depicted in a flow chart. In addition to research procedures, it is also necessary to write down the analysis or product manufacturing process stages. The term limits are the definitions or meanings used following the scope of the research.

#### **2.2.5. RESULTS AND DISCUSSION**

Research results contain primary and or secondary data. Qualitative research results are expressed in the form of scientific narratives following the research objectives, while those which are quantitative are presented in the form of tables, graphs, and photographs. The data presented in the results and discussion chapter should not be pure data but statistically processed results, while the laboratory or field data obtained can be entered in the form of pure data, which is written in the APPENDIX.

Presentation of research results or observations can be in text, tables, pictures, graphics, and photos. The research results can contain the main data, supporting data, and complementary data needed to strengthen the research results using statistical tests, if under certain conditions it is possible not to use statistical tests. The narrative of the research results contains an overview of the meaning contained in tables, pictures, graphics, and photos.

The discussion is comprehensively and proportionally related to the research results, which is reinforced by the results of other researchers, the results of references from previous studies or textbooks. Reviews in the discussion can be in the form of theoretical explanations both qualitatively and quantitatively.



## **2.2.6. CONCLUSIONS AND SUGGESTIONS**

Conclusions and Suggestions chapter contains:

### **2.2.6.1. Conclusion**

Conclusions are arranged in a narrative form that answers the research question stated in the problem formulation and research objectives section.

Conclusions can be narrative only or with the results in the form of numbers. The narrative of the conclusions of the research results is conveyed without using statistical language.

### **2.2.6.2. Suggestion**

Suggestions are descriptions or recommendations that refer to research conclusions that interested parties can use.

Suggestions are written in the form of suggestions for applying research results and further research on unresolved problems for the development of these research results.

## **2.3. FINAL SECTION**

The final part consists of:

### **2.3.1. REFERENCES**

The following numbers are the guidelines for how to write references that are used to refer to the Harvard style with a few modifications:

- 1) All sources cited in scientific papers must be written in the references section.
- 2) References are not divided into sections based on the type of literature, such as books, journals, the internet, etc.
- 3) References are arranged alphabetically (a-z) based on the last name of the author or responsible institution, without serial numbers, using one space with a hanging line (hanging indent).

Here's how to write the author's name:

- a. The author's last name is placed first, followed by the abbreviation (initials) of the first and middle name (unless ethnic Chinese names are written as is, for example, The Liang Gie).

- b. The name of the author or the editor's name does not need to be included in the title.
  - c. Authors with more than three people, starting from the fourth author, written as dkk for books in Indonesian, while for books in English written by et al.
  - d. If there is no author's name, the name of the institution/organization should be written and sorted alphabetically.
- 4) Each part is separated by a period (.) Except between the last name and initials of the author's first name separated by a comma (,). If the author is more than one, then the authors' names are also separated by a comma (,).
  - 5) The literature title is italicized, and each word must use a capital letter (Title Case) except for the liaison.
  - 6) Information on new editions needs to be written, while printed information does not need to be written.
  - 7) The publisher's name needs to be written, preferably written ISSN / ISBN (no need to include the name of the legal entity or business entity of the publisher, such as PT, CV, and the like).
  - 8) Several references are quoted from an author, the way of writing is as follows: The author's name is simply mentioned in the first library, while the following references are replaced by an underscore four times (\_\_\_\_\_).
  - 9) References sorted by year of publication (from oldest to newest).
  - 10) References with the same publication year are sorted in lowercase letters accompanying the publication year (for example 2018a, 2018b, 2018c, and so on).

### *2.3.1.1. Book*

#### *2.3.1.1.1. Printed book*

Author/editor last name, first initial. Publication Year. Book title. Edition (if the edition is more than one). Place of publisher: Name of publisher.

- a. One author  
Susilawati, T. 2011. *Spermatologi*. Malang: UB Press.  
ISBN: 978-602-8960-04-5
- b. Two authors  
Solimun and A.R. Fernandes. 2017. *Multivariate Statistical Methods for Structural Equation Modeling (SEM) Wrap PLS Approach*. Malang: UB Press.
- c. More than three authors  
Yekti, A.P., T. Susilawati, M.N. Ihsan, et al. 2003. *Animal Reproduction Physiology (Basis of Reproduction Management)*. Malang: UB Press.
- d. Books edited by editors  
Ezra, E. (ed.). 2004. *European Cinema*. Oxford: OUP.
- e. The chapter book on the cover has the name of the editor  
The chapter author's last name, first initial. Year of publication. Title of chapter. In: Editor's last name, first initial. (ed.) One editor (eds.) more than one editor. Book title. Edition (if the edition is more than one). Publisher place: Publisher name, Page Number.  
Garner D.L., and E.S.E., Hafez. 2008. Spermatozoa and Seminal Plasma In Hafez, E.S.E ,. (eds.). *Reproduction in Farm Animals 7th ed*. Lea, and Febiger Philadelphia: 165—187.
- f. Books that come from institutions/organizations  
Ministry of Education. 2012. *Big Indonesian Dictionary. Fourth Edition*. Jakarta: Gramedia Pustaka Utama.
- g. Translated book  
Ritzer, G. 2014. *Modern Sociological Theory*. Triwibowo, B.S. Jakarta: Prenada Kencana.



### 2.3.1.1.2. Digital Book (e-book)

The writing pattern of library sources is in the form of e-books accessed from digital libraries, PDF files downloaded from a website and stored on a computer, or from other electronic media.

Author/editor last name, first initial. Publication Year. Book title. Edition (if the edition is more than one).

[Online / PDF / Kindle according to the file type used]. Place of publisher: Name of publisher. Access date. <Web address>.

#### a. Online

Simons, N.E.B., Menzies, and M. Matthews, 2001. *A Short Course in Soil and Rock Slope Engineering*. [Online]. London: Thomas Telford Publishing. Accessed 18 June 2008. <<http://www.myilibrary.com?ID=93941>>.

#### b. PDF

Howson, C. 2007. *Successful Business Intelligence: Secrets to Making BI a Killer App*. [PDF]. New York: McGraw Hill. Accessed 6 October 2011. <<http://www.ebooks.com/330687/successful-business-intelligence/howson-cindi/>>.

#### c. Kindle

Roubini, N. and Mihm, S. 2011. *Crisis economics: a crash course in the future of finance*. [Kindle]. London: Penguin. Accessed 6 October 2011. <[http://www.amazon.co.uk/Crisis-Economics-Course-Finance-book/dp/B004Y4WMHW/ref=sr\\_1\\_7?S=digital text & ie = UTF8 & qid = 1317896488 & sr = 1-7](http://www.amazon.co.uk/Crisis-Economics-Course-Finance-book/dp/B004Y4WMHW/ref=sr_1_7?S=digital+text&ie=UTF8&qid=1317896488&sr=1-7)> .

### 2.3.1.2. Journal Articles

The writing of references from a journal article is Author last name, first name initials. Year of Publication. Title of the article. Journal name, Volume (Published number, if any), Page number. Doi: DOI number (if any).

#### A. One writer

Hall, M. 2019. Breaking The Silence: Marginalization of Registered Nurses Employed in Nursing Homes. *Contemporary Nurse*, 8(1) : 232-237.

#### B. Two authors

Arabani, M., and P. Eat. 2016. Laboratory Investigation of Rutting and Fatigue in Glassphalt Containing Waste Plastic Bottles. *Construction and Building Materials*, 116,:378—383. DOI:

10.1016/j.conbuildmat.2016.04.105.

#### c. More than three authors

Nugroho, E., S. Azizah, T. Susilawati, et al. 2013. Socio-Economic Potential of Indonesian Native Cattle in Supporting Meat Self-Sufficiency in Indonesia. *Livestock Research for Rural Development*, 25(11): 1-8.

The online journal article source is the same as the print journal, only added access date and web address.

### 2.3.1.3.Proceedings

Redknap, M. 2001. *Fourth International Conference on Insular Art*. National Museum &Gallery, Cardiff, 3–6 September 1998. Oxford: Oxbow.

### 2.3.1.4. Website

Suppose the article or image coming from the Website is not known by the author/owner (anonymous). In that case, the author should consider its eligibility to use as a library source. More details can be seen in the discussion of how to take references from the internet. The writing pattern is as follows:

**Author/editor name. Years. The title of the article. Access date. <Web address>.**

Thompson, B. 2009. *What Role for TV in Wired World?*  
Retrieved September 10 2016.  
<<http://news.bbc.co.uk/1/hi/technology/8115671.stm>>.

If the source of writing or images coming from the Website there is only the name of the web institution, then the way of writing the references as follows:

**The name of the web institution. Years. Title of the text/image. Access date. <Web address>.**

#### a. Blog (personal/trusted institution)

Trim, B. 2020. Profession Writer, Looks Dashing and Vulnerable Streets. Retrieved March 3, 2020.  
<<https://www.kompasiana.com/bambangtrim/5e32793b097f36407f4db7a2/profesi-penulis-terlihat-gagah-dan-rentan-jalan-jalan>>.

#### b. Mass media (digital)

Campbell, D. 2017. What does 2017 hold for public services? The Guardian. January 3. Accessed: January 4 2017.  
<<http://www.theguardian.com/society/2017/jan/0>

3/society-2017-prisons-homelessness-welfare-reforms-nhs-social-care>.

### **2.3.2. APPENDIX**

Appendixes are present after the references, and the word of Appendixes put at the top of the centre of the page, capitalized. The Appendix's content is the result of thesis research, which is not including in the body of writing to not interfere with the description, generally in the form of tables that exceed one page, maps of research locations, statistical calculations and procedures supporting research. Each appendix topic is numbering in order with a clear title. Appendix titles writing in lowercase with a capitalized sentence without a period at the end of a sentence. The example can find in Appendix 15.

The data written in the Appendix is the data that has processed. Statistical analysis does not need to be all displayed, but one variable and the next a table of fingerprints and conclusions of statistical results. Statistical analysis can be changed first in Bahasa so that both the author and the reader understand the flow rather than the statistical testing. The number of appendix pages should not be too much, preferably half of the number of contents or not exceeding half the amount of the thesis's contents.

## **CHAPTER III**

### **SCIENTIFIC ARTICLES WRITING**

Following the Regulation of the Minister of Research, Technology and Higher Education Number 50 of 2018 concerning The National Standard of Higher Education that graduates of undergraduate programs compile thesis or final assignment reports and upload them to the repository of Higher Education that integrated into the portal repository of final assignments of students on the [rama.ristekdikti.go.id](http://rama.ristekdikti.go.id) or uploaded as a journal in an integrated national journal on the garuda portal. Thus, undergraduate students' thesis must be writing in the form of a scientific article published in a journal or at least published through Brawijaya University's repository.

The format of the article is adjustable to the terms of the article format imposed by the intended publisher or publisher; starting from the topic or research, the number of words in the title, abstract writing, introduction, method materials, results and discussions, conclusions, and provision state write a references. In this guideline, Article writing follows the standards used for article writing as a requirement for undergraduate students' graduation.

#### **3.1. Article Title**

The article's title does not always have to be the same as the title of the thesis. Commonly, the article's title is more specific or more focused on one topic. Each journal has a maximum word count requirement.

### **3.2. Name and Institution Writing**

The author's name is writing sequentially. The student's name writes as number one, while the supervisor's name writes because the supervisor is also the author of correspondence. The author's name is incomplete without a title. Suppose the field supervisor's name follows the research conduct in other institutions, such as Sapi Potong Research Workshop, then the student's name and so on. Behind each author's name is written numbers in superscript format sequentially as an indicator of each author's institution.

### **3.3. Contact Person**

The contact person gives the email address of the first author and the primary supervisor. This supervisor's email address needs to write because if there is a correction, the journal editor can contact the supervisor.

### **3.4. Abstract**

The abstract is writing in 2 languages, namely Bahasa and English. The number of words is adjusting to the journal's format, generally is 300 words, while writing abstract articles is the same as writing the thesis.

### **3.5. Background or Introduction**

The Introductory Section of scientific articles is written more densely than the Introductory Chapter on the thesis manuscript. It is compiled based on the source of the library, which is the result of previous research. Furthermore, in the Introduction section of scientific articles, it is stated that the research problems are also state arranged in such a way that the flow is increasingly complicated so that the scientific reason why the research in question is essential to more clearly.

### **3.6. Materials and methods**

The content of the article's materials and methods is the same as in the thesis but denser. In setting variables and statistical analysis based on accurate library sources, writing library sources for method materials using textbooks or handbooks in the science, or precise journal articles.

The method's material structure is the research location, the study's time, the material used in detail, the design used, the number of replays and variables observed, the determination of variables or parameters measured based on trustworthy library sources.

### **3.7. Results and Discussion**

The Writing of these results and discussions varies in format, some are combined between products and panels, but some are separated only results and discussions only.

The Writing of results and discussions begins with determining sub-chapters of the discussions. At the beginning of Writing is the conclusion of the sub-topic of research, then described in a table containing the average + standard deviation of each treatment and given a statistical sign, i.e. different genuine ( $P < 0.05$ ) or different unreal ( $P > 0.05$ ).

Furthermore, compared with the results of previous research, if the same, it follows the previous study, but if not the same, then the author must explain why there is a difference with prior research results.

### **3.8. Conclusion**

Conclusions are prepared in the form of narratives of research results submitted without the use of statistical language. The decision is the answer to the problem, and the purpose of research Conclusions are delivered in the form of narratives only or numbers.

### **3.9. Acknowledgements**

Acknowledgements to scholarship funders or research financiers and agencies that facilitate the implementation of research.

### **3.10. References**

The library's source used writes that the references's technical Writing adjusted to the journal's format.



## **CHAPTER IV**

### **WRITING FORMAT**

The form or format of writing the thesis report is as follows:

#### **4.1. Paper**

The paper used is HVS A5 size with a paperweight of 80g printed back and forth. The original manuscript as the student's handle is concerned while for the Faculty, Study Program and other purposes can be photocopied and reproduced to photocopying of the clean manuscript with the original signature approval page.

#### **4.2. Font**

Scientific manuscripts are typing by a computer with a word processing program MS. Word with letters of type Times New Roman typing size 11 pt.

Each chapter starts on a new page, typed in capital letters placed in the page's top centre. Sub-chapters are organised on the left side of the page, with lowercase except for each word's first letter typed in capital letters. Word breaks in a single sentence must follow the standard and correct Indonesian language rules.

#### **4.3. Margin**

Typing limit 3 cm from the left side of the paper, 2 cm from the right side border, 2.5 cm from the bottom and the top side of the paper, excluding page numbers. Right-left text-aligned setting (justify).

#### **4.4. Spacing**

Each paragraph starts with a 0.5" stop tab. Table title text, images, and references that exceed the following line are typing one space below the first line. After the periods and commas are give a space one tap away. The distance between text lines is 1.15 spaces, while table headings, images,

appendixs are one space. The texting distance with the next chapter child is two spaces. After a comma and a colon are spaced one length (before the colon, don't have to space except after the new sentence, it is space one space.

#### **4.5. Italics**

Language words outside the standard Bahasa are writing in italics, e.g. English, Latin and others.

#### **4.6. Table**

The table is created according to the format in Appendix 16 must be contained on-page that should not be broken or continued on the next page. Table Headings should be easy to understand and written with a distance of 1 space and capital letters only at the beginning of the sentence and ending without periods. The data source contained in the table must be mentioned and written after the table underscores with a distance of 1 space.

#### **4.7. Images**

Images include graphs, diagrams, monograms, photos, maps, schematics. Sample Figure 1. Population data etc. The lettering and the first letter of the first word use lowercase letters and the Image heading under the picture. The title of the image caption is created with a space of 1 space. The thesis is typed on white HVS A5 paper, weighing 80 grams, printed back and forth. The original manuscript as a handle of the student concerned while for the Department of Study Programs and Faculties and other purposes can be photocopied with the original signature approval page.

#### **4.8. Writing Style and Consistency**

Writing scientific works has a variety of styles and compositions of Writing. In principle, the author has the same purpose, which is to create a scientific work that can be accounted for, so that there have to variety and consistency in

writing numbers or units, terms used, underscores, symmetry, word writing, paragraphs, tables, images, titles and quotations.

#### **4.9. Page Arrangement and Numbering**

The arrangement of the thesis sheet starts from the cover page to the Appendix, respectively arranged as follows:

1. FRONT COVER PAGE
2. BLANK SHEET
3. KRIPSI TITLE PAGE
4. THESIS APPROVAL PAGE
5. LIFE HISTORY PAGE
6. FOREWORD PAGE
7. ABSTRACT PAGES
8. SUMMARY PAGE
9. TABLE OF CONTENTS PAGE
10. TABLE PAGES
11. PICTURE LIST PAGE
12. APPENDIX LIST PAGE
13. ABBREVIATION LIST PAGE
14. CHAPTER I INTRODUCTION
15. CHAPTER II LIBRARY REVIEW
16. CHAPTER III RESEARCH MATERIALS AND METHODS
17. CHAPTER IV RESULTS AND DISCUSSION
18. CHAPTER V CONCLUSIONS AND SUGGESTIONS
19. REFERENCES
20. APPENDIX PAGE

Numbering start from the life history page to the list of appendixs is written in small Roman i, ii, iii, etc., while from the chapter I, the introduction is written with the numbers 1, 2 and so on. The page number placed at the paper's bottom centre is writing with the numbers 1, 2, etc.

#### **4.10. Numbers and Units**

Numbers and units at the beginning of a sentence must be written with a word, but the numbers followed by the month, page number, percentage, time, and unit remain written with numbers, for example, January 1, 1988; 37°C; page 37.5%; 10.30 WIB (dots specific to time) and 8 cm. An integer number up to ten, must be written in a word unless followed by a unit (kg, cm) but if more than ten is written usually, for example; eight; 2 cm; 15; 20 cm.

A number that represents decimal uses a comma (1.50 kg). Thousands or multiples of thousands are written with every three numbers, like 1,000 m; 100,000. The number of digits behind a comma must be consistent (by looking at the type of variable measured) when listed in one table.

#### **4.11. Word Separation at the end of a Line**

The hyphenation at the end of the line must be adjusted to the correct grammar. The left and right borders should be straight. The words in the sentence can be stretched by at most three taps. The conjunction at the end of the page includes on the next page.

#### **4.12. Paragraph**

A paragraph is part of a chapter or sub-sub-chapter that tells a particular statement and contains a single idea. Paragraph writing begins with the sixth tap (tab stop 0.5") from the left border. If the paragraph written in the final line of a page contains only one line is not allowed, it needs to move to the next page. At the end of the page, at least two lines listed.

#### **4.13. Tables and Figures**

Tables, images, graphics, photos must be loaded on the same page and should not be disconnected. A long table (more than one page) is placed inside the appendix. The table results from research that has been processed / analyzed (see

Appendix 16), while the images in the illustrations in the form of photos, graphics, organizational structure, workflows and processes. Table words and images followed by sequence numbers in the script always begin with capital letters. Sequence numbers should not write with words. Table words, numbers, and headings begin three spaces below the text on the corresponding page. Table created one space below the table heading. The lines used to load the table are single and horizontal lines. The contents of the table are typed in one space. The table derived from the secondary data is mentioned as the source, which is written one space below the table's underline in question. The Image in the thesis is as regulation as table creation, but the title is placed two spaces below the Image. Examples of images can be seen in Appendix 17.

#### **4.14. Titles**

The chapter title is written in the top centre of the corresponding chapter page and written in capital letters. Chapter subheadings are written in lowercase except for the front of the word, on the left edge and bold with no dots. It cannot write only the title (example: sub-chapter title, table or picture).

#### **4.15. Quotations**

The quotation written on the thesis must match the intent of the Writing in the library taken. The author's name can be in the front, middle or end of the sentence. Name of the person written :

A. In front of it:

Literature (2014) declares that.....;

Jones (2013) reported that..... or According to Adams (2000), meat also contains.....

B. In the middle of sentences

known by Jones(2012), Arey (2013) andEdeyet al. (2018) that:.....

C. At the end of the sentence:

.....the slurry contain nutritious feed for the animal (Fontenot, et al, 2013)

The use of et al., only utilized for papers in English or foreign language. Papers in Bahasa Indonesia utulesed abbreviation dkk for short of Dan kawan Kawan.

References with unknown aauthors are written as Anonimous, or written with the name of the institution.

**THE ESTIMATION OF GENETIC PARAMETERS FOR BODY  
WEIGHT AND BODY SIZE AT YEARLING AGE OF MALE  
BALI CATTLE**

**UNDERGRADUATE THESIS PROPOSAL**

**By:**

Meidina Chaerunissa

SIN: 165050100111068



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ANIMAL SCIENCE FACULTY  
UNIVERSITY OF BRAWIJAYA  
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Date:.....

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CSIN. 196406231990022001

Date:.....

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Date:.....

### BIOGRAPHY

The author was born in Jakarta, May 20, 1998. The first daughter of Mr. Dadang Abdullah and Alm. Mrs. Della Prihatini. The author started her education in Bank Dagang Negara elementary school and continued to 111 Junior High School Jakarta on RSBI class, then graduated from 112 Senior High School Jakarta in 2016. The author continued her study in the Animal Science Faculty of Brawijaya University in 2016.

The author is active in sports activities, especially in martial arts. The author has an interest in Taekwondo since she was in elementary school. Since high school, the author frequently participated in several tournaments and became an athlete for DKI Jakarta for National Tournament in 2013. When the author moved to Malang, she continued her hobby and became an athlete for East Java for Pra PON 2019. The author also actives in internal organizations such as Kandang Musik for 2016-2018 and TIUB as a Taekwondo organization on campus since 2016. The author joined an internship in 2018 at Madukara Farm in Bumiaji village, Batu, which is focused on dairy goats. In 2019, the author also joined an internship at BPTU-HPT Denpasar for one month, which focused on the management of calves and heifer of Bali cattle.

## Appendix 9. Example of Thesis Acknowledgements

### ACKNOWLEDGEMENTS

Alhamdulillah by the grace of Allah SWT for His blessing, so the author can complete the undergraduate thesis with the title of “**Estimation of Genetic Parameters for Body Weight and Body Size at Yearling Age of Male Bali Cattle.**” The undergraduate thesis was prepared as one of the requirements to obtain a bachelor's degree in animal science.

The author expresses great gratitude to all parties who helped in the completion of the undergraduate thesis from beginning to the end, especially to:

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11. All member of English Class 2016 who gives the meaning of togetherness.

Malang, July 7, 2020

Author

## THE ESTIMATION OF GENETIC PARAMETERS FOR BODY WEIGHT AND BODY SIZE AT YEARLING AGE OF MALE BALI CATTLE

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### ABSTRACT

This research aimed to estimate the genetic parameter for body weight and body size, including body height, body length, and chest girth at the yearling age of male Bali cattle in BPTU-HPT Denpasar, Bali. This research was started from February to March 2020. The materials used were 79 heads of male Bali at yearling. The variables observed were body weight (BW), body height (BH), body length (BL), and chest girth (CG) recorded from 2016 to 2018. The body weight and body size data were analyzed to find the average, standard deviation, and coefficient of variation. The heritability and genetic correlation were calculated using the Paternal half-sib correlation method. Results showed that the average of body weight, body height, body length, and chest girth were  $129.72 \pm 13.73$  kg,  $102.91 \pm 4.27$  cm,  $94.32 \pm 5.54$  cm, and  $121.91 \pm 8.47$  cm, respectively. The value of heritability estimation for body weight, body height, body length, and chest girth were  $0.50 \pm 0.08$ ,  $0.46 \pm 0.07$ ,  $0.44 \pm 0.07$ , and  $0.10 \pm 0.02$ , respectively. The genetic correlation between BW-BH, BW-BL, and BW-CG were categorized as moderate to a high value (0.67, 0.98, and 0.35, respectively). Breeding value for body weight and body height were both 50% positive value, and breeding value for body length and chest girth were 40% and 60% positive value, respectively. The rank correlation coefficient between rank based on BW-BH, BW-BL, and BW-CG were 0.31, 0.61, and -0.01, respectively.

Keywords: Heritability, breeding value, genetic correlation, body height, body length.



## THE ESTIMATION OF GENETIC PARAMETERS FOR BODY WEIGHT AND BODY SIZE AT YEARLING AGE OF MALE BALI CATTLE

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### SUMMARY

Bali cattle is one of the important indigenous cattle breeds contributing to the development of livestock industries in Indonesia. Most of Bali cattle are in the hands of small farmers, Bali cattle is the best for the smallholder farmer. Bali cattle are the most preferred breed due to their adaptability, high fertility, and low calf mortality. With its superiority, Bali cattle have the potential to reach superior performance. The genetic improvement of Bali cattle is very important to increase the quality and quantity of Indonesia's livestock industries.

This research was carried out at BPTU-HPT Denpasar located in Pangyangan Village, Pekutatan District, Jembrana, Bali, and conducted from February to March 2020. This research aims to estimate the heritability, genetic correlation, and breeding value for body weight and body size, including body height, body length, and chest girth at yearling age of Bali cattle. The materials used in this study were 79 heads of male Bali cattle, resulted from 10 sires, which are mated to 79 dams in BPTU-HPT Denpasar. Data used in this research were body weight (BW), body height (BH), body length (BL), and chest girth (CG) at yearling age recorded from 2016 to 2018.

Results showed that the average of body weight, body height, body length, and chest girth were  $129.72 \pm 13.73$  kg,  $102.91 \pm 4.27$  cm,  $94.32 \pm 5.54$  cm, and  $121.91 \pm 8.47$  cm, respectively. The value of heritability estimation for body weight, body height, body length, and chest girth were  $0.50 \pm 0.08$ ,  $0.46 \pm 0.07$ ,  $0.44 \pm 0.07$ , and  $0.10 \pm 0.02$ , respectively. The genetic correlation between BW-BH, BW-BL, and BW-CG were categorized as moderate to a high value (0.67, 0.98, and 0.35, respectively). Breeding value for body weight and body height were both 50% positive value, and breeding value for body length and chest girth were 40% and 60% positive value, respectively. The rank correlation coefficient for BW-BH, BW-BL, and BW-CG were 0.31, 0.61, and -0.01, respectively.

Based on the result of this research, it can be concluded that the heritability value for body weight and body size were categorized as a high value. The genetic correlation for BW-BH, BW-BL, and BW-CG were categorized as moderate to high value. Based on the heritability value, genetic correlation, and rank correlation coefficient, body length could be used as selection criteria, which would give a response to improve body weight.

## Appendix 12. Example of Table of Contents

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## Appendix 16. Example of Tables based on Research Result

Table 2. Analyses of variance for the half-sib method

Source of variance	Degree of freedom (df)	Sum of square (SS)	Middle square (MS)	Expected Mean Square (EMS)
Between sire	$s - 1$	$SS_s$	$MS_s = \frac{MS_s}{s - 1}$	$\sigma_w^2 + n\sigma_s^2$
Within sire	$s(n - 1)$	$SS_w$	$MS_w = \frac{MS_w}{s - 1}$	$\sigma_w^2$
Total	$ns - 1$	$SS_t$		

$s$  = Total sire

$n$  = Total offspring each sire

$\sigma_s^2$  = Variance between sire

$\sigma_w^2$  = Variance within sire

Table 3. The result of estimation of heritability value on body weight and body size of Bali cattle at yearling age

Variable	n	$h^2$	SE
Body Weight (kg)	79	0.50	0.08
Body Height (cm)	79	0.46	0.07
Body Length (cm)	79	0.44	0.07
Chest Girth (cm)	79	0.10	0.02

$h^2$  : Heritability

SE : Standard Error

BW : Body Weight

BH : Body Height

BL : Body Length

CG : Chest Girth

## Appendix 17. Example of Figures based on Research Result

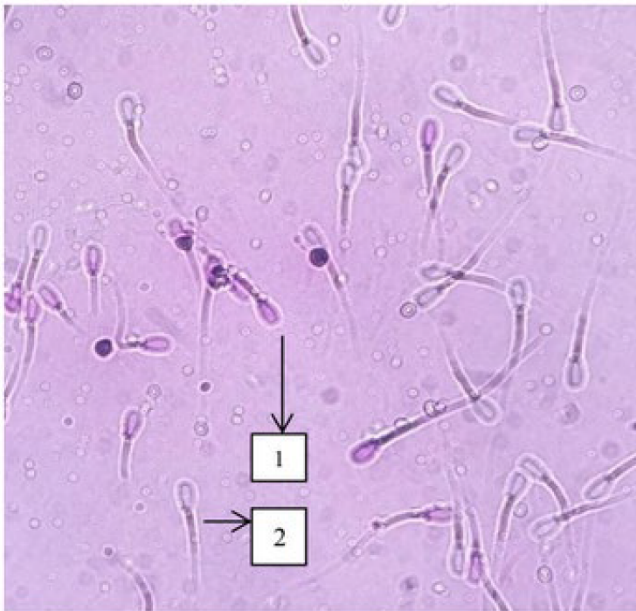


Figure 4. Observation of Spermatozoa Viability

Information: 1 : Dead Spermatozoa

2 : Live Spermatozoa



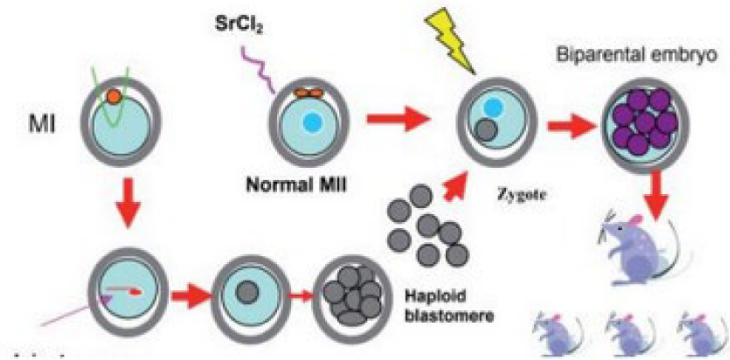
## Appendix 18. Example of Table with References

Table 4. Minimum quantitative requirements for Bali cattle

Age (Month)	Parameter	Units	Grade		
			I	II	III
18-24	Body Height	cm	115	110	105
	Body Length	cm	125	120	115
	Chest Girth	cm	155	147	142
>24-36	Body Height	cm	127	120	113
	Body Length	cm	133	124	119
	Chest Girth	cm	179	158	148

Source: SNI 7651-4: 2017

## Appendix 19. Example of Table Figure with References



Source: Wu, 2012

### Figure 4. Steps of Genom Spermatozoa Cloning

## Appendix 20. Example of References

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